

generator 11 which generates a predetermined watermark data signal $w_i(n)$ for each watermark W_i ." (col. 2, lines 18-21). As described at col. 2, lines 15-18, "The watermark can be a code which uniquely identifies the owner of the copyright. It can also be a text string or simply a binary coded number. Accordingly, there is a finite set of different watermarks W_i ." As should be apparent from examining Fig. 1, the particular watermark W_i used in watermarking the image signal $p(n)$ is pre-selected and applied to the watermark data signal generator 11, which generates the associated watermark data signal which is added to the image signal $p(n)$ in adder 12.

The Rao et al. patent discloses automatic adjustment of image watermark strength based on computed image texture, in which the texture in an image is computed, from a previously determined model relating watermark intensity to image texture, a watermark intensity is determined based on the computed texture, the intensity of a watermark is adjusted accordingly, and the image is watermarked with the intensity-adjusted watermark.

In the subject invention, as claimed in claims 1 and 9, a given property of the information signal to be watermarked is analyzed and an actual value of the given property is determined. In addition, different sets of basic watermark patterns in a plurality of sets of basic watermark patterns are associated with distinct values of the given property, each set of basic watermark patterns being a combination of two or more basic watermark

patterns. Finally, the set of basic watermark patterns from the plurality of sets of basic watermark patterns which is associated with the actual value of the property is selected for watermarking the information signal. A result of this is, over the course of time, the embedded set of basic watermark patterns changes, and as such, a plurality of sets of basic watermark patterns are used, depending on the actual value of the given property of the information signal.

This is shown in Figs. 5 and 6, and described in the Substitute Specification on page 9, line 9 to page 10, line 7 (paragraphs [0025]-[0026]), in which a selected set of basic watermark patterns (wherein each basic watermark pattern has a relatively small size) are tiled over the image.

Applicants submit that while Rao et al. discloses varying the intensity of a watermark based on image texture, which may arguably be deemed selecting one out of a plurality of watermarks, there is no disclosure or suggestion in Rao et al. that the plurality of watermarks is, in fact, a plurality of sets of basic watermark patterns, and that the selected watermark is one of the sets of basic watermark patterns, wherein the embedding process embeds the set of basic watermark patterns. This is described in the Substitute Specification on page 9, paragraph [0025] in which the set of basic watermark patterns are tiled over the image by a tiling circuit.

In the current Office Action, the Examiner states "Rao discloses calculating a texture value associated with the corresponding portion or several portions of the image. The portion(s) may be matrices of pixel values of the image, and the texture value may represent a measure of a base strength of the portion, or of other characteristics of the image content of the portion. Next, a watermark image is selected at step 204, and then parameters associated with a model for watermark strength, which use the texture values are retrieved at step 205 ... (Col. 5, lines 8-46). Therefore, Rao's disclosure applies different watermark patterns/strengths for watermarking different images."

Applicants submit that the main difference between Linnartz/Rao et al. and the subject invention is that Linnartz/Rao et al. selects a single watermark pattern/strength in dependence on the image parameter, while the subject invention selects, from a plurality of sets, a set of basic watermark patterns (each set including two or more basic watermark patterns) in dependence on the image parameter. This whole set of basic watermark patterns is then used to watermark the image, e.g., by tiling.

It should be noted that while an image (frame) has been used in the above description of the subject invention, the claims do not contain such a limitation. Hence, the selected set of basic watermark patterns may be applied to a portion of an image, where

the set of basic watermark patterns are, for example, tiled over the relevant portion of the image.


The Brust patent discloses a process and system for rapid analysis of the spectrum of a signal at one or several points of measuring, in which, arguably, the shape of a frequency spectrum of an audio signal is detected.

Applicants submit, however, that the combination of this feature with Linnartz and Rao et al. is meaningless with respect to the subject invention, in that neither Brust nor Linnartz nor Rao et al. disclose or suggest "associating different sets of basic watermark patterns in a plurality of sets of basic watermark patterns with distinct values of said property, each set of basic watermark patterns being a combination of two or more basic watermark patterns", and "selecting the set of basic watermark patterns from said plurality of sets of basic watermark patterns associated with said actual value for embedding in the information signal".

In view of the above, Applicants believe that the subject invention, as claimed, is not rendered obvious by the prior art, either individually or collectively, and as such, is patentable thereover.

Applicants believe that this application, containing claims 1-3, 5-7, 9 and 10, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

by 
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